

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) An anomaly diagnosis system provided in a vehicle having an internal combustion engine ~~of internal combustion~~ and a component relating to the engine, the anomaly diagnosis system comprising:

warming-up means for executing warming-up of at least one of the engine and the component;

pre-start state detecting means for detecting a pre-start state by detecting a preparation operation ~~aimed~~ for a start of the engine, wherein the warming-up means ~~beforehand~~ executes the warming-up prior to the start of the engine when the pre-start state detecting means detects the pre-start state; and

anomaly detecting means for detecting an anomaly of the pre-start state detecting means.

2. (original) The anomaly diagnosis system of Claim 1, further comprising:

vehicle state detecting means for detecting a vehicle state,

wherein the pre-start state detecting means detects the pre-start state based on a given signal, and

wherein the anomaly detecting means detects the anomaly of the pre-start state detecting means based on the given signal and the vehicle state detected by the vehicle state detecting means.

3. (currently amended) The anomaly diagnosis system of Claim 2,
wherein the pre-start state detecting means detects the pre-start state based on an ON-signal or an OFF-signal of a driver seat switch as the given signal, wherein the ON-signal or OFF-signal of the driver seat switch indicates whether a driver is seated on a driver seat or not, respectively.

4. (currently amended) The anomaly diagnosis system of Claim 3,
wherein, when the ON-signal of the driver seat switch is not detected and at least one of eight conditions included in the vehicle state detected by the vehicle state detecting means is ~~effected~~satisfied, the anomaly detecting means detects ~~the an~~ anomaly of the pre-start state detecting means, wherein:

a first condition of the eight conditions is that a vehicle speed is greater than or equal to a first given speed~~or above~~;

a second condition of the eight conditions is that an engine rotation speed is greater than or equal to a second given speed~~or above~~;

a third condition of the eight conditions is that an amount of air that is sucked into the engine is greater than or equal to a third given amount~~or above~~;

a fourth condition of the eight conditions is that a pressure detected by a suction pressure sensor provided in an exhaust path is greater than or equal to a fourth given pressure~~or above~~;

a fifth condition of the eight conditions is that an opening degree of an accelerator is greater than or equal to a fifth given degree~~or above~~;

a sixth condition of the eight conditions is that an opening degree of a throttle is

greater than or equal to a sixth given degree or above;

a seventh condition of the eight conditions is that ~~an amount of stepping of a brake pedal~~ deceleration is greater than or equal to a seventh given amount or above; and

an eighth condition of the eight conditions is that an depression amount of ~~stepping of a clutch pedal~~ is greater than or equal to an eighth given amount or above.

5. (currently amended) The anomaly diagnosis system of Claim 3,
wherein, when the ON-signal of the driver seat switch is not detected and it is detected that the driver retires from the vehicle, the anomaly detecting means detects ~~the~~an anomaly of the pre-start state detecting means.

6. (currently amended) The anomaly diagnosis system of Claim 2,
wherein the pre-start state detecting means detects the pre-start state based on an ON-signal or an OFF-signal of an ignition key insertion switch ~~of an ignition key~~ as the given signal, wherein the ON-signal or OFF-signal of the ignition key insertion switch indicates whether an ignition key is ~~being~~ inserted or not, respectively.

7. (currently amended) The anomaly diagnosis system of Claim 6,
wherein, when the ON-signal of the ignition key insertion switch is not detected and at least one of ten conditions included in the vehicle state detected by the vehicle state detecting means is ~~effected~~satisfied, the anomaly detecting means detects ~~the~~an anomaly of the pre-start state detecting means, wherein:

a first condition of the ten conditions is that a vehicle speed is greater than or

equal to a ~~first~~given speed ~~or above~~;

a second condition of the ten conditions is that an engine rotation speed is greater than or equal to a second~~given~~ speed ~~or above~~;

a third condition of the ten conditions is that an amount of air that is sucked into the engine is greater than or equal to a third~~given~~ amount ~~or above~~;

a fourth condition of the ten conditions is that a pressure detected by a suction pressure sensor provided in an exhaust path is greater than or equal to a fourth~~given~~ pressure ~~or above~~;

a fifth condition of the ten conditions is that an opening degree of an accelerator is greater than or equal to a fifth~~given~~ degree ~~or above~~;

a sixth condition of the ten conditions is that an opening degree of a throttle is greater than or equal to a sixth~~given~~ degree ~~or above~~;

a seventh condition of the ten conditions is that an amount of stepping of a brake pedal is greater than or equal to a seventh~~given~~ amount ~~or above~~;

an eighth condition of the ten conditions is that an amount of stepping of a clutch pedal is greater than or equal to an eighth a given amount ~~or above~~;

a ninth condition of the ten conditions is that the ignition key is positioned at an ON position; and

a tenth condition of the ten conditions is that the ignition key is positioned at a START position.

8. (currently amended) The anomaly diagnosis system of Claim 2,
wherein the pre-start state detecting means detects the pre-start state based on a

door opening/closing switch signal as the given signal, wherein the door opening/closing switch signal indicates whether a door of the vehicle is open or closed~~an operation state of opening or closing of a door of the vehicle.~~

9. (currently amended) The anomaly diagnosis system of Claim 8,
wherein a state of a ~~door-knob~~door-handle manipulation switch is detected by the vehicle state detecting means, and
wherein, when the pre-start state is not detected based on the door opening/closing switch signal for a given period including a given time at which a ~~door knob~~door-handle is operated based on the state of the ~~door-knob~~door-handle manipulation switch, the anomaly detecting means detects an~~the~~ anomaly of the pre-start state detecting means.

10. (currently amended) The anomaly diagnosis system of Claim 2,
wherein the pre-start state detecting means detects the pre-start state based on a ~~door-knob~~door-handle manipulation switch signal as the given signal, wherein the ~~door-knob~~door-handle manipulation switch signal indicates an operation state of a ~~door-knob~~door-handle of the vehicle.

11. (currently amended) The anomaly diagnosis system of Claim 10,
wherein a state of a door opening/closing switch is detected by the vehicle state detecting means, and
wherein, when the pre-start state is not detected based on the ~~door-knob~~door-

handle switch signal for a given period including a given time at which the door is operated based on the state of the door opening/closing switch, the anomaly detecting means detects anthe anomaly of the pre-start state detecting means.

12. (original) The anomaly diagnosis system of Claim 1,
wherein, when the anomaly of the pre-start state detecting means continues for more than a given period, the anomaly detecting means diagnoses the pre-start state detecting means with a final anomaly.

13. (currently amended) The anomaly diagnosis system of Claim 1,
wherein the anomaly detecting means continuously increments a counter while the anomaly of the pre-start state detecting means is being detected, and
wherein, when the count exceeds a given count, the anomaly detecting means diagnoses the pre-start state detecting means with a final anomaly.

14. (currently amended) The anomaly diagnosis system of Claim 1,
wherein the warming-up means executes the warming-up by controlling an electric current flowing through a heater provided in at least one of five units, wherein:
a first unit of the five units is an air/fuel ratio sensor provided in an exhaust path;
a second unit of the five units is a suction pipe;
a third unit of the five units is a catalytic converter provided in the exhaust gas path for purifying harmful gas;
a fourth unit of the five units is a fuel injection valve provided for injecting fuel

into the engine; and

a fifth unit of the five units is a canister provided for adsorbing vapor fuel vaporized from a fuel tank.

15. (new) A method of diagnosing an anomaly in a vehicle having an internal combustion engine and a component relating to the engine, the method comprising:

executing warm-up of at least one of the engine and the component;

detecting, with a pre-start state detector, a pre-start state by detecting a preparation operation for a start of the engine, wherein the warm-up is executed prior to the start of the engine when the pre-start state is detected; and

detecting an anomaly of the pre-start state detector.

16. (new) The method of Claim 15, further comprising:

detecting a vehicle state,

wherein the pre-start state detector detects the pre-start state based on a given signal, and

the anomaly of the pre-start state detector is detected based on the given signal and the detected vehicle state.

17. (new) The method of Claim 16,

wherein the pre-start state detector detects the pre-start state based on an ON-signal or an OFF-signal of a driver seat switch as the given signal, wherein the ON-signal or OFF-signal of the driver seat switch indicates whether a driver is seated on a driver

seat or not, respectively.

18. (new) The method of Claim 17,
wherein, when the ON-signal of the driver seat switch is not detected and it is detected that the driver retires from the vehicle, an anomaly of the pre-start state detector is detected.

19. (new) The method of Claim 16,
wherein the pre-start state detector detects the pre-start state based on an ON-signal or an OFF-signal of an ignition key insertion switch as the given signal, wherein the ON-signal or OFF-signal of the ignition key insertion switch indicates whether an ignition key is inserted or not, respectively.

20. (new) The method of Claim 16,
wherein the pre-start state detector detects the pre-start state based on a door opening/closing switch signal as the given signal, wherein the door opening/closing switch signal indicates whether a door of the vehicle is open or closed.

21. (new) The method of Claim 20,
wherein a state of a door-handle manipulation switch is detected, and
wherein, when the pre-start state is not detected based on the door opening/closing switch signal for a given period including a given time at which a door-handle is operated based on the state of the door-handle manipulation switch, the

anomaly of the pre-start state detector is detected.

22. (new) The method of Claim 16,

wherein the pre-start state detector detects the pre-start state based on a door-handle manipulation switch signal as the given signal, wherein the door-handle manipulation switch signal indicates an operation state of a door-handle of the vehicle.

23. (new) The method of Claim 22,

wherein a state of a door opening/closing switch is detected, and

wherein, when the pre-start state is not detected based on the door-handle switch signal for a given period including a given time at which the door is operated based on the state of the door opening/closing switch, an anomaly of the pre-start state detector is detected.

24. (new) The method of Claim 16,

wherein, when the anomaly of the pre-start state detector continues for more than a given period, the pre-start state detector is diagnosed with an anomaly condition.

25. (new) The method of Claim 16,

wherein a counter is continuously incremented while the anomaly of the pre-start state detector is being detected, and

when the count exceeds a given count, the pre-start state detector is diagnosed with an anomaly condition.